

**I N S T I T U T E   O F   T U R O L I A N   S T U D I E S**  
**A S S I G N E D   T O   T H E   " J O S E   M A R I A   Q U A D R A T O "   P A T R O N A G E**  
**O F   T H E   U P P E R   C O U N S E L   O F   S C I E N T I F I C   I N V E S T I G A T I O N S**

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# DISCOVERY OF DINOSAUR REMAINS IN GALVE \*

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In the periodical *Lucha* of Teruel, on August 11 of the present year, under the title “Discovery of archeological interest in the city limits of Galve,” an article signed by L. Español, in which the account occurred of the discovery, apart from several works of polished axes and currencies of various ages, of a certain number of large fossil bones. At the same time, the discoverer and collector of such objects, Dr. José Maria Herrero Marzo, passed corresponding advice to the Excavation Service of the Provincial Exec. Council. In agreement with this Service, and in sent commission by the Institute of Turolian Studies, we brought the head of the Section of Natural Sciences to the referred locality in Galve this past August 28, in an automobile kindly loaned by the President of the Council.

The commissioners were able to visit the sites of the discoveries, as well as briefly study the material recognized by Mr. Herrero, of which a large part was transported to Teruel, being deposited in the Provincial Museum.

Later I was again in Galve on two further occasions, one on September 28, accompanied by the great Dutch paleontologist R. G. H. von Koenigswald and his students, in order to briefly prospect the terrain; and the other, alone, on the 25<sup>th</sup> of the same month, to make excavations in search of more remains.

Mrs. Atrián will give an opportune account of the archeological discoveries, which is why I will talk exclusively about the fossils obtained.

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\* Original citation: Fernandez-Galiano, D. 1958. Descubrimiento de restos de dinosaurios en Galve. *Teruel* 20:201–203. Translated by Matthew Carrano, Smithsonian Institution, April 2009.

First it is necessary to point out that the material in our control up to now, which as I said before has been deposited in the Provincial Museum of Teruel, in spite of being numerous enough, and, of course, very interesting, is only a small part of that surely contained in the ground, since to date three distinct localities of analogous characteristics have been discovered; the Institute of Turolian Studies thinks for this reason to continue practicing excavations that could throw to light a great number of pieces.

The first locality noted is a slope in the place named “Corral de la Maca,” about two kilometers from the town of Galve; the bones are enclosed in alluvium of strong sandstone and clay layers, placed dipping almost vertical—toward the south and in approximately an east-west alignment. The terrain is Cretaceous, probably coastal facies, Wealdian, with the noted sandstones and clays, ripple marks, and freshwater molluscs (*Unio*), and the extracted material consists almost exclusively of a good collection of enormous vertebrae, some more than twenty centimeters in diameter, which surely pertain to a reptile of the genus *Iguanodon*. Some of the vertebrae are fairly rounded, and the majority are lacking the spinous process down to its base, preserving in some a fragment of this process.

On the second and third visits we were able to make excavations in two more localities, one of them situated in the highway that accesses Galve, about 150 meters from the town, and another at the base of a neighboring hill, more distant. Both have characteristics similar to those of the “La Maca” locality: that of the highway is singularly rich, from which several more vertebrae have been taken, as well as large fragments of long bones, of which some are nearly complete. The third locality has still not been the object of a serious excavation, but by the number of fragments of long bones that appeared when surface excavation was begun it seems to be equally fertile.

The total material recognized includes twenty-five vertebrae, a dozen large long bone shafts, and an enormous quantity of small fragments, among which diverse pieces of vertebral spinous processes are extraordinarily abundant. Already in the Museum, I have been able to partially complete various vertebrae with their corresponding spinous processes, as well as unite fragments of other bones. Some of the vertebrae are clearly opisthocoelous, with all probability pertaining to the neck of the animal, whereas others

have flat faces and are much larger, reason to hope that they pertain to the center of the vertebral column. Finally, some are relatively small and amphicoelous, which are evidently the caudals. For now, unfortunately, no sign of the head nor a single piece of tooth has been encountered. Nevertheless, a reptilian tooth was found in a lower level, although not identified, as well as a small piece of crocodilian scute.

The importance that must be attributed to these discoveries is for me considerable. Not many discoveries of this class of fossils have been made in Spain, and I have no concrete news of any in which such abundant material has been encountered. In our province, and in the Wealdian of Utrillas, Vilanova found in 1873 two long bones of *Iguanodon*, and in the collection of the National Museum of Natural Sciences exists a pedal phalanx from another of these reptiles, found in Mora de Rubilos (1).

Outside the province the discoveries are not very abundant either, and only those of Morella, where successively Vilanova and Royo (2), but mainly Beltrán (3), recognized teeth and fragments of *Iguanodon*, and those of Benageber (Valencia), where teachers Dr. José María Catalá and Dr. Juan Vallés found some teeth, vertebrae, and various fragments between 1914 and 1926, now in the Museum of Natural Sciences in Madrid (4), are known.

I have nothing more left than to thank the cultured and friendly attitude toward us of the discoverer of the localities, Dr. José María Herrero Marzo, example of citizens, by the persistence, disinterestedness, and enthusiasm that he has put into the discovery and conservation of the fossils.

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(1) J. ROYO, BOL. DE LA R. SOC. ESP. DE HIST. NAT., vol. XX, p. 261, 1920.

(2) J. ROYO, BOL. DE LA R. SOC. ESP. DE HIST. NAT., vol. XVIII, p. 133, 1918.

(3) J. ROYO, BOL. DE LA R. SOC. ESP. DE HIST. NAT., vol. XVIII, p. 133, 1918.

F. BELTRÁN, BOL. DE LA R. SOC. ESP. DE HIST. NAT., vol. XVIII, p. 134, 1918.

(4) J. ROYO, BOL. DE LA R. SOC. ESP. DE HIST. NAT., vol. XXVI, p. 449, 1926, and vol. XXVII, p. 113, 1927.